CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 4 TO ORDER NO. 90-16

AN ADDENDUM REVISING THE WASTE DISCHARGE REQUIREMENTS
FOR THE
CITY OF SAN DIEGO
SAN PASQUAL RECLAMATION FACILITY
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On January 29, 1990 this Regional Board adopted Order No. 90-16, *"Waste Discharge Requirements for the City of San Diego, San Pasqual Reclamation Facility, San Diego County."* Order No. 90-16, as amended, established waste discharge requirements for the disposal of up to 1.0 million gallons per day (MGD) of treated effluent from the San Pasqual Reclamation Facility (SPRF) by irrigation and land disposal.

2. By letter dated January 17, 1996, the City of San Diego (hereinafter discharger) requested that the effluent limit for percent sodium be raised from 60% to 75% because the addition of sodium hydroxide and sodium hypochlorite during the treatment process caused them to frequently exceed the discharge limit.

3. By letter dated August 28, 1996, the discharger requested that they be allowed to use the composted water hyacinths generated at the facility as a soil amendment at other city facilities or by other interested parties. The discharger submitted analytical data which indicated that the composted material met all of the exceptional quality standards for soil amendments as stated in 40 CFR 503.13 as outlined by the United States Environmental Protection Agency.

4. The *"Water Quality Control Plan for the San Diego Basin (9)"* (Basin Plan) states that the percent sodium water quality objective was developed in 1963 for the protection of agricultural uses from the potential sodium hazard in irrigation waters. Since that time more applicable criteria for addressing sodium in irrigation water have been developed. The adjusted sodium adsorption radio is now the most common method for determining sodium hazard in irrigation water.

5. This addendum deletes effluent monitoring for percent sodium and adds monitoring for adjusted sodium adsorption ratio, adds reporting requirements

for water hyacinth composting, and clarifies the sampling location for total and fecal coliform and chlorine residual.

6. This addendum modifies the discharge specifications prescribed for mineral constituents in a manner that is consistent with similar facilities regulated by this Regional Board. The modifications are also consistent with the water quality criteria contained in the Basin Plan.

7. As noted in Findings No. 22 and 23 of Order No. 90-16, the San Diego City Council certified a final Environmental Impact Report (EIR) and an addendum to the final EIR in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.).

8. The Regional Board has notified all known interested parties of its intent to modify Order No. 90-16.

9. The Regional Board in a public hearing on March 12, 1997 in Oceanside, California heard and considered all comments pertaining to the modification of Order No. 90-16.

**IT IS HEREBY ORDERED**, that Order No. 90-16 shall be amended as follows:

1. Replace Discharge Specification B.1.a with the following:

| Constituent | Daily Maximum | 30-Day Average[1] | 12-Month Average[2] |
|---|---|---|---|
| Biochemical Oxygen Demand ($BOD_5$ @ 20°C) | 30 mg/L | 20 mg/l | --- |
| Total Suspended Solids | 30 mg/L | 20 mg/L | --- |
| pH | Within the limits of 6.0 and 9.0 at all times. | | |
| Total Dissolved Solids | --- | --- | * |
| Chloride | --- | --- | 150 mg/L |
| Sulfate | --- | --- | * |
| Nitrate (as $NO_3$)** | --- | --- | 10 mg/L |
| Iron | --- | --- | 0.3 mg/L |
| Manganese | --- | --- | 0.05 mg/L12-Month Average[2] |

| Constituent | Daily Maximum | 30-Day Average[1] | 12-Month Average[2] |
|---|---|---|---|
| Methylene Blue Active Substances** | --- | --- | 0.5 mg/L12-Month Average[2] |
| Boron | --- | --- | 0.5 mg/L |
| Fluoride | --- | --- | 1.0 mg/L |
| Arsenic | 0.05 mg/L | --- | --- |
| Cadmium | 0.01 mg/L | --- | --- |
| Chromium (total) | 0.05 mg/L | --- | --- |

[1] The 30-day average effluent limitation shall apply to the arithmetic mean of the results of all, but not less than four samples collected during any 30 consecutive calendar day period.

[2] The daily maximum effluent limitation shall apply to the results of a single composite or grab sample.

* Not to exceed the twelve-month running average concentration found in the MWD water. Compliance with this effluent limitation for any month shall be determined by comparison of the twelve-month running average of the effluent quality with the twelve-month running average of the MWD water quality.

** The nitrate and methylene blue active substances effluent limist shall apply only to effluent which is disposed of via injection wells.

2. The following shall be added as Prohibition A.10:

Composted water hyacinths that have a fecal coliform content greater than 1,000 MPN/gram (dry weight) shall not be sold to the public or used by the City of San Diego as a soil amendment.

3. Monitoring and Reporting Program No. 90-16, Section B, Effluent Monitoring shall be amended to delete monitoring for percent sodium and to add the following:

| Constituent | Unit | Sample Type | Sampling Frequency | Reporting Frequency |
|---|---|---|---|---|
| Adjusted Sodium Adsorption Ratio[1] | --- | Composite | Monthly | Monthly |

[1] The adjusted sodium adsorption radio is calculated as follows:

Adjusted Sodium Adsorption Ratio (Adj. SAR): $\frac{Na}{\sqrt{(Ca_x + Mg)/2}}$,

where Na and Mg are in milliequivalent per liter (me/l).

$Ca_x$ is a modified Ca value calculated using Table 3-2 contained in *"Irrigation with Reclaimed Municipal Wastewater, A guidance Manual."*

3. Monitoring and Reporting Program No. 90-16, Section B., Effluent Monitoring shall also be amended to include the following:

All effluent monitoring for coliform and chlorine residual shall be conducted at the effluent pump station.

4. Monitoring and Reporting Program No. 90-16, Section F, Sewage Solids, shall be amended to include the following:

The discharger shall submit an annual report certifying that all composted water hyacinth material used by the City of San Diego or distributed to other users does not contain fecal coliform values that exceed 1,000 MPN/gram (dry weight). The discharger must submit all analytical results upon which the discharger has based their conclusions.

I, John H. Robertus, do hereby certify that the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on March 12, 1997.

JOHN H. ROBERTUS
EXECUTIVE OFFICER

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 3 TO ORDER NO. 90-16

AN ADDENDUM REVISING THE ADDITIONAL REQUIREMENTS
FOR AN ALTERNATIVE DISINFECTION PROCESS AT THE
CITY OF SAN DIEGO
SAN PASQUAL RECLAMATION FACILITY
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On January 29, 1996 this Regional Board adopted Order No. 90-16, *Waste Discharge Requirements for the City of San Diego, San Pasqual Reclamation Facility, San Diego County*. Order No. 90-16, as amended, established waste discharge requirements for the disposal of up to 1.0 million gallons per day (MGD) of treated effluent from the San Pasqual Reclamation Facility (SPRF) by irrigation and land disposal.

2. This addendum modifies Order No. 90-16 as recommended by the State Department of Health Services in their letter dated November 6, 1996, which proposed revised effluent limitations and operational requirements based on a recently completed virus reduction study by the City of San Diego.

3. As noted by Findings No. 22 and 23 of Order 90-16, the San Diego City Council certified a final Environmental Impact Report (EIR) and an addendum to the final EIR in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.).

4. The Regional Board has notified all known interested parties of its intent to modify Order No. 90-16.

5. The Regional Board in a public hearing heard and considered all comments pertaining to the modification of Order No. 90-16.

**IT IS HEREBY ORDERED,** That Order No. 90-16 be amended as follows:

1. Discharge Specification B.1.b shall be changed to require the following:

   The median number of coliform organisms in the recycled water delivered to the distribution system shall not exceed 2.2 per 100 milliliters, based on the last seven days sample results the number of coliform organisms shall not exceed 23 per 100 milliliters in more than one sample within any 30-day period. Coliform samples shall be collected at the effluent pump station.

Addendum No. 3 to Order No. 90-16

2. Discharge Specification B.1.c shall be changed to require the following:

   The effluent turbidity shall not exceed 1 NTU more than five percent of the time during any 24 hour period and the maximum effluent turbidity shall not exceed 2 NTU at any time. The San Pasqual Reclamation Facility shall be operated to meet an average effluent turbidity of 0.5 NTU or less based on samples collected every four hours.

3. Discharge Specification B.1.d shall be changed to require the following:

   The chlorine residual at the effluent pump station shall be at least 2 mg/l at all times provided the U.V. disinfection facilities are in operation and at least 25 percent of the flow is treated by reverse osmosis. If the U.V. disinfection facilities and/or reverse osmosis facilities are out of service, the chlorine residual at the effluent pump station shall be at least 5 mg/l. The chlorine residual requirement does not apply when the plant is shut down and potable water is being delivered to the distribution system.

4. The following shall be inserted as Discharge Specification 10.

   10. The San Pasqual Reclamation Facility (SPRF) shall be operated to achieve a minimum of 5 logs virus reduction at all times. A 5 logs virus reduction can be achieved if the effluent meets the turbidity requirements specified in Discharge Specification B.1.c, the disinfection requirements in Discharge Specification B.1.d and the lime and ferric clarification processes are in operation at all times. The City may change the operation of the SPRF to achieve the same virus reduction goals provided they receive approval from the Regional Board and the Department of Health Services.

I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum No. 3 to Order No. 90-16 adopted by the California Regional Water Quality Control Board, San Diego Region, on January 9, 1997.

JOHN H. ROBERTUS
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 2 TO ORDER NO. 90-16

AN ADDENDUM ESTABLISHING ADDITIONAL REQUIREMENTS
FOR AN ALTERNATIVE DISINFECTION PROCESS AT THE
CITY OF SAN DIEGO
SAN PASQUAL RECLAMATION FACILITY
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On January 29, 1990 this Regional Board adopted Order No. 90-16, "Waste Discharge Requirements for the City of San Diego, San Pasqual Reclamation Facility, San Diego County." Order No. 90-16, as amended by Addendum No. 1, established waste discharge requirements for the disposal of up to 1.0 MGD of treated effluent from the San Pasqual Reclamation Facility by irrigation and land disposal.

2. On November 10, 1993, the City of San Diego submitted an Engineering Report as required by Reporting Requirement D.8 of Order No. 90-16. The report indicated that the disinfection process is not consistent with the State Department of Health Services, "Guidelines for Use of Reclaimed Water."

3. On April 1, 1994, the State Department of Health Services (DOHS) responded to the City's Engineering Report stating that because the minimum chlorine contact time provided at the plant at the design flow of 1.0 MGD is slightly less than the required contact time for tertiary treated water, the inactivation provided at the plant is considered an alternative disinfection process. State DOHS has required that the City demonstrate that the treatment processes, from the secondary effluent through the chlorine contact time can reliably reduce the concentration of the Poliovirus I, F-specific bacteriophage MS2 (MS2), or some other more resistant virus to one one hundred thousandth (1/100,000) of the initial concentration in the secondary effluent. This is equivalent to a five log reduction.

7. The Regional Board, in modifying Order No. 90-16, considered factors including, but not limited to, the following:

   (a) Beneficial uses to be protected and the water quality objectives reasonably required for that purpose;

   (b) Other waste discharges;

   (c) The need to prevent nuisance;

   (d) Past, present, and probable future beneficial uses of the hydrologic subunits under consideration;

   (e) Environmental characteristics of the hydrologic subunits under consideration;

   (f) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;

   (g) Economic considerations;

   (h) The need for additional housing within the region; and

   (i) The need to develop and use recycled water.

8. The Regional Board has considered all water resource related environmental factors associated with the proposed modification of waste discharge requirements.

9. The Regional Board has notified the City of San Diego and all known interested parties of the intent to modify the waste discharge requirements.

10. The Regional Board in a public meeting heard and considered all comments pertaining to the proposed modification of waste discharge requirements.

Board, the State DOHS, and the San Diego DOHS. The discharge shall not be initiated until:

a. The certification report is accepted by the Executive Officer;

b. The Executive Officer has been notified of the completion of facilities by the City;

c. A letter from the State Department of Health Services approving the proposed reclaimed water injection project.

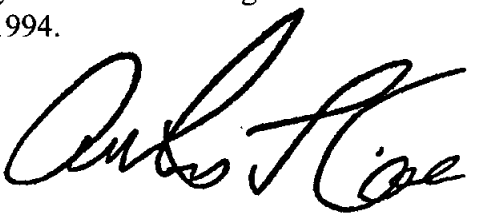
d. An inspection of the facilities has been made by Regional Board staff; and

e. The Executive Officer has notified the discharger by letter that the discharge can be initiated.

4. The following shall be added to Monitoring and Reporting Program, (B) Effluent Monitoring:

| Constituent | Unit | Sample Type | Sampling Frequency | Reporting Frequency |
|---|---|---|---|---|
| Chlorine Residual | mg/l | Continuous | Continuous | Monthly |

I, Arthur L. Coe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Addendum No. 2 to Order No. 90-16 adopted by the California Regional Water Quality Control Board, San Diego Region, on August 11, 1994.



Arthur L. Coe
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ORDER NO. 90-16

WASTE DISCHARGE REQUIREMENTS
FOR THE
CITY OF SAN DIEGO
SAN PASQUAL RECLAMATION FACILITY
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On July 29, 1985, this Regional Board adopted Order No. 85-53, **Waste Discharge Requirements for the City of San Diego, San Diego Aquatic Treatment (Pilot Project) Facility, San Diego County**. Order No. 85-53 established requirements for the operation of a 1.0 million gallon per day (MGD) aquatic treatment facility located in Mission Valley. Order No. 85-53 also established requirements for the disposal of up to 0.138 MGD of treated wastewater via spray irrigation along Interstate 8 and Interstate 15.

2. On October 27, 1986, July 27, 1987 and August 21, 1989, this Regional Board adopted Addendum No. 1, Addendum No. 2 and Addendum No. 3 to Order No. 85-53, respectively, to reflect an expansion of irrigation areas along Interstate 8 and Interstate 15.

3. On November 20, 1987, Will Sniffin, Deputy Director, Water Utilities Department, City of San Diego (hereinafter discharger), submitted an incomplete Report of Waste Discharge (RWD) for the San Pasqual Reclamation Facility. After the submission of additional information on November 9, 1988 and February 3, 1989, the RWD was considered complete.

4. The discharger reports that the existing San Diego Aquatic Treatment (Pilot Project) Facility will be relocated to San Pasqual Valley during February 1991 due to the limited demand for reclaimed water in Mission Valley and due to the widening of Camino del Rio North from two lanes to four lanes which would encroach on the existing site.

5. The discharger reports that the proposed San Pasqual Reclamation Facility will have a design capacity of 1.0 MGD. The primary treatment facilities will be at Rancho Bernardo Pump Station #77 which is located near West Bernardo Drive, aproximately one mile south of the Pomerado Road offramp of Interstate 15. The primary treatment facilities will include a 1.0 MGD bar rack, a grit chamber, a rotary drum screen, and three 0.5 MGD rotary disk filters (one filter will be standby). Each filter will be covered with a 250 micron screen. All primary solids will be returned to the sewer. Additional treatment facilities will be located approximately three miles northeast of Pump Station #77. Primary effluent will be distributed to twenty-four aquaculture ponds in a step feed mode. The aquaculture ponds will have a hypalon liner to prevent percolation of the wastewater to the Hodges basin. The discharger reports that the permeability of the hypalon liner is $< 3.3 \times 10^{-10}$ centimeters per second. The ponds will be equipped with a diffused, fine bubble aeration system with a 120 cubic foot per minute (cfm) capacity. The ponds will have a recirculation system capable of recycling 200% of the effluent flow to the influent end. The ponds will have a freeze protection system which includes distribution of pond effluent through rotary sprinklers which will cover the aquaculture ponds. The freeze protection system will be activated when the air temperature falls below 38°F. The discharger reports that pond effluent will be coagulated, settled and

passed through a multi-media filter. Subsequently, half of the flow will be treated via 0.5 MGD capacity advanced wastewater treatment facilities which will include ultraviolet disinfection, reverse osmosis, air stripping, carbon adsorption and lime treatment. Reverse osmosis brine, backwash solids and pond solids will be returned to Rancho Bernardo Pump Station #77. The filter effluent which does not receive advanced treatment and the advanced treatment effluent will be commingled, chlorinated and pumped to a 1.0 million gallon steel storage reservoir and subsequently distributed to reclaimed water users or pumped to two injection wells which will recharge the Hodges basin during periods of low irrigation demand.

6. The discharger reports that the aquaculture ponds will be harvested using a clamshell scoop mounted on a truck at periods dictated by growth rates and proper vector management. The water hyacinths will be chopped and pressed to extract the juice from the plants. The juice will be anaerobically digested and used to generate methane gas. Initially, the gas will be flared until it can be determined whether or not it would be economically feasible to construct and operate cogeneration facilities. If it is determined that it is economically feasible, the cogeneration facilities will be constructed and operated. Methane gas will be converted to electricity which will be used onsite. If it is determined that it would not be economically feasible to construct and operate cogeneration facilities, the discharger will continue to chop and press the water hyacinths, anaerobically digest water hyacinth juice and flare the methane gas. The discharger reports that the water hyacinths will be dried to 40% solids on a concrete drying pad. Subsequently, the dried water hyacinths may be composted and used as a soil amendment or may be further dried and landfilled.

7. The discharger reports that two extraction wells will be located in the SE¼ Section 1 (projected), T13S, R2W, SBBM downgradient of the injection wells [located in the SW¼ Section 12 (projected), T13S, R2W, SBBM]. Ground water will be pumped at a rate of 1000 gallons per minute to supplement the San Pasqual Reclamation Facility's effluent during periods of peak irrigation demand.

8. The discharger reports that the potential reclaimed water users will include:

   a. Arid West Nursery, located in the NW¼ Section 7 (projected), T13S, R1W, near Highland Valley Road, approximately 2½ miles east of Interstate 15. Reclaimed water would be used for nursery stock irrigation with drip emitters.

   b. Jansic Nursery, located in the SE¼ Section 12 (projected), T13S, R2W, near Highland Valley Road, approximately 2 miles east of Interstate 15. Reclaimed water would be used for nursery stock irrigation with drip emitters.

   c. Pepper Tree Nursery, located in the SW¼ Section 11 (projected), T13S, R2W, near the intersection of Pomerado Road and Highland Valley Road. Reclaimed water would be used for nursery stock irrigation with drip emitters.

   d. California Department of Transportation, reclaimed water use area located in the SE¼ Section 10 (projected) T13S, R2W, along Interstate 15, primarily at the Pomerado Road interchange. Reclaimed water would be used for landscape irrigation using impact sprayers and drip emitters.

   e. Rancho Bernardo Playing Fields, located in the NW¼ Section 15 (projected), T13S,

R2W, along west Bernardo Drive, west of Interstate 15 and north of Rancho Bernardo Pump Station #77. Reclaimed water would be used for turf irrigation using impact sprayers.

f. Rancho Bernardo Pump Station #77, located in the NW¼ Section 15 (projected), T13S, R2W, west of Interstate 15 and north of the Westwood homes in Rancho Bernardo. Reclaimed water would be used for backwash water for the primary screening process and landscape irrigation using drip emitters.

g. San Pasqual Reclamation Facility, located in the SW¼, Section 7, T13S, R1W and Section 12, T13S, R2W, SBBM, south of Highland Valley Road, approximately three miles east of Interstate 15. Reclaimed water would be used onsite for landscape irrigation using impact sprayers and drip emitters.

All of above reclamation areas, injection wells and extraction wells are located in the Hodges Hydrographic Subarea (5.21) of the Hodges Hydrographic Subunit of the San Dieguito Hydrographic Unit. The location of the reclaimed water users, injection wells and extraction wells are shown on Attachment No. 1 to this Order.

9. The discharger reports that the following measures will be implemented to control odors from Rancho Bernardo Pump Station #77 and the San Pasqual Reclamation Facility:

a. Rancho Bernardo Pump Station #77

- air from primary treatment facilities will be passed through a granular activated carbon packed tower for odor scrubbing and control.

b. San Pasqual Reclamation Facility

- primary effluent will flow into pre-aeration tanks to ensure that the wastestream is aerobic prior to discharge to the aquaculture ponds.

- aquaculture ponds will be equipped with a supplemental aeration system, typically operated at 60 cubic feet per minute (cfm) but with an excess emergency capacity of 120 cfm with redundancy in system capacity and blowers for emergency service.

10. The discharger reports that mosquitos will be controlled by the use of sprinklers at each aquaculture pond. Mosquito fish (Gambusia) will be used as a backup to control mosquito larvae in the aquaculture ponds. A minimum dissolved oxygen concentration of 1.0 milligram per liter will be maintained in the ponds to optimize the environment for the mosquito fish. If the above methods should fail, then chemicals such as BTI or Golden Bear 1111 Oil will be used sparingly to control the mosquito larvae in the aquaculture ponds. In a telephone conversation with Mr. Jim Shumake, Vector Control, Environmental Health Services, County of San Diego, Regional Board staff was informed that BTI is a bioculture which acts as a growth inhibitor for adult mosquitos and that Golden Bear 1111 Oil is a petroleum product which should readily dissipate within 48 hours of application. Mr. Shumake stated that neither BTI nor Golden Bear 1111 Oil should pose a threat to water quality in the Hodges Basin.

11. The discharger reports that it will provide the following fail-safe system for the San

Pasqual Reclamation Facility:

a. Treatment plant capacity in the City of Escondido's Hale Avenue Wastewater Treatment Plant will be maintained and used in case of system failure at the San Pasqual Reclamation Facility; and

b. If an aquaculture pond fails so that it cannot adequately recover, the water will be drained and conveyed back to Rancho Bernardo Pump Station #77 and subsequently to the City of Escondido's Hale Avenue Wastewater Treatment Plant for treatment and disposal.

12. By letter dated November 8, 1989, the discharger submitted an operation and maintenance program for the aquaculture ponds which will include draining, cleaning, inspecting and leak testing of the liner of each aquaculture pond annually. This Order requires implementation of an operation and maintenance program for the San Pasqual Reclamation Facility. This Order also requires the discharger to propose and implement a ground water monitoring program and a leak detection program.

13. The discharger reports that the alternate water supply for the California Department of Transportation irrigation area, Jansic Nursery, Rancho Bernardo playing fields, Pump Station #77 and the San Pasqual Reclamation Facility consists of a blend of Colorado River and Northern California water from the Metropolitan Water District of Southern California (MWD). Water quality data for this alternate water supply is provided below:

| Constituent | Unit | Concentration |
|---|---|---|
| Total Dissolved Solids | mg/L | 499 |
| Chloride | mg/L | 64.5 |
| Sulfate | mg/L | 143 |
| Nitrate (as $NO_3$) | mg/L | 0.75 |
| Fluoride | mg/L | 0.22 |
| Sodium | mg/L | 68.2 |
| pH | Units | 8.40 |

Note: mg/L = milligrams per liter

14. The discharger projected the quality of the effluent from the San Pasqual Reclamation Facility based on composite samples taken from the raw sewage line during August 31-September 2, 1987 and based on removal rates obtained at the San Diego Aquatic Treatment (Pilot Project) Facility plus 50% of the effluent treated by reverse osmosis. The projected effluent quality is as follows:

| Constituent | Unit | Concentration |
|---|---|---|
| Biochemical Oxygen Demand ($BOD_5$ @ 20°C) | mg/L | < 1.0 |
| Total Suspended Solids | mg/L | < 1.0 |
| Total Dissolved Solids | mg/L | 500 |
| Chloride | mg/L | 140 |
| Sulfate | mg/L | 108 |
| Nitrate (as $NO_3$) | mg/L | 2.5 |
| Fluoride | mg/L | 0.4 |
| Sodium | mg/L | 81 |
| pH | pH Units | 8.20 |

15. The discharger reports that the use of reclaimed water will replace the use of poor quality well water (total dissolved solids concentration ranging from 900-2000 mg/L) for irrigation of the Arid West Nursery and the Pepper Tree Nursery. The discharger performed a salt balance study on the Hodges basin to determine the impact of the proposed project on the salinity of the ground water. The salt balance showed that implementation of the proposed project, as described in the findings of this Order, will improve ground water quality in the Hodges basin.

16. The discharge specifications for biochemical oxygen demand, total suspended solids and pH are based on levels which can be reasonably achieved by the San Pasqual Reclamation Facility. The discharge specifications for total dissolved solids and sulfate are based on State Water Resources Control Board (State Board) Order No. WQ 80-7, **In the Matter of the Petition of the County of San Diego for Review of Inaction of San Diego Regional Water Quality Control Board Regarding Implementation of Water Reclamation Goals.** State Board Order No. WQ 80-7 provides that, in setting waste discharge requirements for wastewater reclamation projects, compliance with water quality objectives is of primary importance. In the absence of a detailed technical analysis of the entire basin, Order No. WQ 80-7 directs the Regional Board to exercise sound and reasoned judgement in evaluating wastewater reclamation projects. The factors considered should not be limited to increases in mineral concentrations expected to occur as a result of evaporation and plant transpiration of reclaimed water used for irrigation. Consistent with the State policy of encouraging wastewater reclamation, the Regional Board should take into consideration the quality of imported water that would be used for irrigation in the absence of a reclamation project. Order No. WQ 80-7 further provides that a higher limitation may be appropriate in cases where the reclaimed water can be used as a substitute for ground water which is high in total dissolved solids. Although there are different alternate water supplies for different reclaimed water use areas, as indicated in Finding Nos. 13 and 15, the same quality reclaimed water will be supplied to all reclaimed water use areas from the San Pasqual Reclamation Facility. Therefore the discharge

specifications for total dissolved solids and sulfate were set to match the 12-month running average of the MWD water, which is the higher quality of the two alternate water supplies. The discharge specification for chloride was based on the Basin Plan water quality objective and a concentration factor of 3.33 (based on an irrigation efficiency of 70%, as presented in the RWD). The discharge specifications for percent sodium, nitrate (as $NO_3$), iron, manganese, methylene blue active substances, boron and fluoride were set to match Basin Plan water quality objectives for the Hodges Hydrographic Subunit. The discharge specifications for arsenic, cadmium, chromium and lead were set to match the Primary Drinking Water Standards established by the California State Department of Health Services for community systems.

17. The "Comprehensive Water Quality Control Plan Report, San Diego Region (9)"(Basin Plan) was adopted by this Regional Board on March 17, 1975; approved by the State Water Resources Control Board on March 20, 1975; and updated by the Regional Board on February 27, 1978, March 23, 1981, January 23 and October 3, 1983, August 27, 1984, December 16, 1985, March 24, 1986 and April 25, 1988. The updates were subsequently approved by the State Board.

18. The Basin Plan established the following beneficial uses for the surface waters of the Hodges Hydrographic Subunit:

    a. Municipal and domestic supply
    b. Agricultural supply
    c. Industrial service supply
    d. Industrial process supply
    e. Ground water recharge *
    f. Water contact recreation
    g. Non-contact water recreation
    h. Warm fresh-water habitat
    i. Cold fresh-water habitat
    j. Wildlife habitat

    * Potential beneficial use.

19. The Basin Plan established the following beneficial uses for the ground waters of the Hodges Hydrographic Subunit:

    a. Municipal and domestic supply**
    b. Agricultural supply**
    c. Industrial service supply
    d. Ground water recharge*

    ** Existing beneficial use, but water quality does not meet criteria for municipal and either agricultural irrigation or livestock watering.

20. The Basin Plan established the following water quality objectives for the Hodges Hydrographic Subunit:

| Constituent | Concentrations not to be exceeded more than 10% of the time | |
|---|---|---|
| | **Ground Water** | **Surface Water** |
| Total Dissolved Solids | 1000 mg/L | 500 mg/L |
| Chloride | 400 mg/L | 250 mg/L |
| Percent Sodium | 60 | 60 |
| Sulfate | 500 mg/L | 250 mg/L |
| Nitrate (as $NO_3$) | 10 mg/L | --- |
| Nitrogen and Phosphorus | --- | *** |
| Iron | 0.3 mg/L | 0.3 mg/L |
| Manganese | 0.05 mg/L | 0.05 mg/L |
| Methylene Blue Active Substances | 0.5 mg/L | 0.5 mg/L |
| Boron | 0.5 mg/L | 0.5 mg/L |
| Odor | None | None |
| Turbidity | 5 NTU | 20 NTU |
| Color | 15 Units | 20 Units |
| Fluoride | 1.0 mg/L | 1.0 mg/L |

Note: NTU = Nephelometric Turbidity Units

***Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth. Threshold total phosphorus (P) concentrations shall not exceed 0.05 mg/L in any stream at the point where it enters any standing body of water, nor 0.025 mg/L in any standing body of water. A desired goal in order to prevent public nuisances in streams and other flowing waters appears to be 0.1 mg/L total P. These values are not to be exceeded more than 10 percent of the time unless studies of the specific water body in question clearly show that water quality objective changes are permissible and changes are approved by the Regional Board. Analogous threshold values have not been set for nitrogen compounds; however, natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld. If data are lacking, a ratio of N:P = 10:1 shall be used.

21. The Basin Plan contains the following prohibitions which are applicable to the discharge:

"Discharge of treated or untreated sewage or industrial wastes to a natural watercourse upstream of surface storage or diversion facilities used for municipal supply is prohibited.

"Discharge of treated or untreated sewage or industrial wastewater, exclusive of cooling water or other waters which are chemically unchanged, to a watercourse, is prohibited except in cases where the quality of said discharge complies with the receiving body's water quality objectives.

"Discharging of treated or untreated sewage or industrial wastes in such manner or volume as to cause sustained surface flow or ponding on lands not owned or under the control of the discharger is prohibited except in cases defined in the previous paragraph and in cases in which the responsibility for all downstream adverse effects is accepted by the discharger.

"The dumping or deposition of oil, garbage, trash or other solid municipal, industrial or agricultural waste directly into inland waters or watercourses or adjacent to the watercourses in any manner which may permit its being washed into the watercourse is prohibited."

22. On June 27, 1988, the San Diego City Council certified a final Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.). The EIR identified the following mitigation measures regarding water quality for the San Pasqual Reclamation Facility:

    a. Conduct a comprehensive ground water monitoring program as recommended by the Regional Board and submit the results monthly.

    b. Line the aquaculture ponds to prevent leakage of wastewater to the Hodges basin.

    c. Provide emergency measures in case of failure in the treatment and disposal facilities.

    This Order requires the discharger to submit a proposed ground water monitoring program and to implement the ground water monitoring program after approval by the Executive Officer. The discharger has incorporated a hypalon liner in the design of the aquaculture ponds as described in Finding No. 5 of this Order. The discharger has incorporated a fail-safe system for the San Pasqual Reclamation Facility as described in Finding No. 11 of this Order.

23. On March 13, 1989, the San Diego City Council certified an addendum to the final EIR in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.). This addendum addresses changes in the design of the San Pasqual Reclamation Facility including:

    a. The addition of a 50,000 gallon per day tertiary treatment test facility which will be housed in the same building as the 0.5 MGD tertiary treatment facility and will be used for testing purposes only.

    b. A reduction in the number (from 3 to 2) of injection wells which will be used to recharge the Hodges basin.

    This addendum to the final EIR also includes the mitigation measures for water quality as described in Finding No. 22.

24. The Regional Board, in establishing the requirements contained herein, considered factors including, but not limited to the following:

    a. Past, present, and probable future beneficial uses of water.
    b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
    c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
    d. Economic considerations.
    e. The need for developing housing within the region.
    f. Beneficial uses to be protected and the water quality objectives reasonably required

g. Other waste discharges.
h. The need to prevent nuisance.

25. The Regional Board has considered all water resource related environmental factors associated with the proposed discharge of waste.

26. The Regional Board has notified the discharger and all known interested parties of the intent to issue waste discharge requirements for the proposed discharge.

27. The Regional Board in a public meeting heard and considered all comments pertaining to the proposed discharge.

IT IS HEREBY ORDERED, That the City of San Diego (hereinafter discharger), in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. Discharges of wastes, including windblown spray and runoff of effluent applied for irrigation, to lands which have not been specifically described to the Regional Board and for which valid waste discharge requirements are not in force are prohibited.

2. The discharge of any radiological, chemical or biological warfare agent, or high level radiological waste is prohibited.

3. The disposal of wastewater in a manner that would result in ponding or surfacing of wastewater on lands beyond the disposal area, as described in the findings of this Order, is prohibited.

4. The discharge of wastewater shall not:

(a) Cause the occurrence of coliform or pathogenic organisms in waters pumped from the basin;

(b) Cause the occurrence of objectionable tastes and odors in waters pumped from the basin;

(c) Cause waters pumped from the basin to foam;

(d) Cause the presence of toxic materials in waters pumped from the basin;

(e) Cause the pH of waters pumped from the basin to fall below 6.0 or rise above 9.0;

(f) Cause this Regional Board's objectives for the ground or surface waters of the Hodges Hydrographic Subunit as established in the Basin Plan, to be exceeded;

(g) Cause odors, septicity, mosquitos or other vectors, weed growth or other nuisance conditions in Lake Hodges or its tributaries;

(h) Cause a surface flow recognizable as sewage in tributaries to Lake Hodges; or

(i) Cause a pollution, contamination or nuisance or adversely affect beneficial uses of the ground or surface waters of the Hodges Hydrographic Subunit as established in the Basin Plan.

5. The discharge of a waste flow volume in excess of 1.0 MGD is prohibited unless the discharger obtains revised waste discharge requirements for the proposed increased flowrate.

6. Odors, vectors, and other nuisances of sewage or sewage sludge origin beyond the limits of the treatment plant site or disposal area are prohibited.

7. The bypassing of wastewater from the San Pasqual Reclamation Facility which does not meet the effluent limitations established in Discharge Specification B.1 of this Order is prohibited.

8. The discharge of waste in a manner other than as described in the findings of this Order is prohibited unless the discharger obtains revised waste discharge requirements that provide for the proposed change.

9. The discharge of treated or untreated wastewater to Lake Hodges or its tributaries is prohibited.

B. DISCHARGE SPECIFICATIONS

1. The discharge of an effluent containing pollutants in excess of the following effluent limitations is prohibited:

| Constituent | 30-day[1] Average | Daily[2] Maximum |
|---|---|---|
| Biochemical Oxygen Demand ($BOD_5$ @ 20°C) | 20 mg/L | 30 mg/L |
| Total Suspended Solids | 20 mg/L | 30 mg/L |
| pH | Within the limits of 6.0 to 9.0 at all times | |
| Total Dissolved Solids | * | --- |
| Chloride | 150 mg/L | 200 mg/L |
| Percent Sodium | 60 | 65 |
| Sulfate | * | --- |
| Nitrate (as $NO_3$)** | 10 mg/L | 12 mg/L |
| Iron | 0.3 mg/L | 0.4 mg/L |
| Manganese | 0.05 mg/L | 0.06 mg/L |
| Methylene Blue Active Substances | 0.5 mg/L | 0.6 mg/L |
| Boron | 0.5 mg/L | 0.6 mg/L |
| Fluoride | 1.0 mg/L | 1.2 mg/L |
| Arsenic | --- | 0.05 mg/L |
| Cadmium | --- | 0.01 mg/L |
| Chromium (total) | --- | 0.05 mg/L |
| Lead | --- | |

[1]The 30-day average effluent limitation shall apply to the arithmetic mean of the results of all, but not less than four, samples collected during any 30 consecutive calendar day period.

[2]The daily maximum effluent limitation shall apply to the results of a single composite or grab sample.

*Not to exceed the twelve-month running average concentration found in the MWD water. Compliance with this effluent limitation for any month shall be determined by comparison of the twelve-month running average of the effluent quality with the twelve-month running average of the MWD water quality.

**The nitrate effluent limit shall apply only to effluent which is disposed of via injection wells.

2. All waste treatment and disposal facilities (including aquaculture ponds, storage reservoir and injection wells) shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.

3. All waste treatment and disposal facilities (including aquaculture ponds, storage reservoir and injection wells) shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year frequency 24-hour storm.

4. Collected screenings, sludges, other solids removed from liquid wastes, and filter backwash shall be disposed of in a manner approved by the Executive Officer.

5. Water softener regeneration brines and reverse osmosis brines shall be hauled to a Class I disposal site, to a sewerage system, or disposed by other means approved by the Executive Officer.

6. Effluent used for irrigation shall conform with all applicable provisions of California Code of Regulations, Title 22, Division 4, Chapter 3 (**Wastewater Reclamation Criteria**) in its present form or as it may be amended.

7. Adequate facilities shall be provided to contain or dispose of effluent during wet weather periods and other periods when irrigation demand is less than the reclaimed water supply.

8. The bottoms and sides of the aquaculture ponds shall be rendered impervious[3] and shall be maintained in an impervious state.

9. The discharger shall implement an operation and maintenance program for the San Pasqual Reclamation Facility. Maintenance of the aquaculture ponds shall include draining each pond and cleaning and leak testing each pond liner annually, in accordance with the discharger's letter dated November 8, 1989 and attachments thereto. The operation and maintenance program for the aquaculture ponds shall include measures to ensure that the sides and the bottom of the aquaculture ponds remain impervious. The operation and maintenance program shall also include a schedule which details the frequency and nature of maintenance required for the aquaculture ponds as well as disposition of sludges which will accumulate in the aquaculture ponds. A copy of this operation and maintenance program shall be maintained at the San Pasqual Reclamation Facility and shall be available to operating personnel at all times.

C. PROVISIONS

1. Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code.

2. Reclaimed water shall not be supplied to parties who use, transport, or store such water in a manner which causes a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code.

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3"Impervious" shall be defined as having permeability less than or equal to $1 \times 10^{-6}$ centimeters per second.

3. The discharger must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for (a) enforcement action; (b) termination, revocation and reissuance, or modification of this Order; or (c) denial of a report of waste discharge in application for new or revised waste discharge requirements.

4. In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

5. The discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

6. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order.

7. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

   (a) Violation of any terms or conditions of this Order;

   (b) Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts; or

   (c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   The filing of a request by the discharger for the modification, revocation and reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

8. This Order is not transferrable to any person except after notice to the Executive Officer. The Regional Board may require modification or revocation and reissuance of this Order to change the name of the discharger and incorporate such other requirements as may be necessary under the California Water Code. The discharger shall submit notice of any proposed transfer of this Order's responsibility and coverage to a new discharger as described under Reporting Requirement D.3.

9. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the discharger from its liability under federal, state or local laws, nor create a vested right for the discharger to continue the waste discharge.

10. The discharger shall allow the Regional Board, or authorized representatives upon the presentation of credentials and other documents as may be required by law, to:

    (a) Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

    (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

    (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

    (d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

11. The discharger's wastewater treatment facilities shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Chapter 3, Subchapter 14, Title 23 of the California Code of Regulations.

12. A copy of this Order shall be maintained at the San Pasqual Reclamation Facility and shall be available to operating personnel at all times.

13. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

14. The potable water supply shall not be used to supplement the reclaimed water supply except through an approved air gap. In other areas where the potable water supply is piped to premises where sewage is pumped, treated or reclaimed (i.e., sewage treatment plants or pumping stations, golf course, etc.) the potable water supply shall be protected at the property line in accordance with the State Department of Health Services' **Regulations Relating to Cross-Connections.**

15. All irrigation with reclaimed water shall be done by the discharger or by parties which have obtained authorization from the discharger and water reclamation requirements from this Regional Board.

16. Reclaimed water shall only be supplied to and used in areas for which valid waste discharge requirements, as established by this Order and subsequent addenda, are in force. Prior to using reclaimed water or supplying reclaimed water for use by other parties in any manner or in any area other than as described in the findings

of this Order, the discharger shall obtain proper authorization from this Regional Board. The discharger shall not supply reclaimed water to any party until and unless such party obtains water reclamation requirements from this Regional Board.

17. Reclaimed water shall be used in conformance with **Guidelines for Use of Reclaimed Water** prepared by the State Department of Health Services or in a manner which provides equivalent protection of public health.

18. If the discharger is supplying reclaimed water for use by other parties, the discharger shall establish rules and regulations governing the design and operation of reclaimed water use facilities. The rules and regulations shall be in conformance with **Guidelines for Use of Reclaimed Water** prepared by the State Department of Health Services or shall provide for equivalent protection of public health.

19. If the discharger is using reclaimed water, the discharger shall designate a reclaimed water supervisor responsible for the reclaimed water system at each use area under the discharger's control. If the discharger is supplying reclaimed water for use by another party, the discharger shall require that each such user designate a reclaimed water supervisor responsible for the reclaimed water system at each use area under the user's control. Reclaimed water supervisors should be responsible for the installation, operation, and maintenance of the irrigation system, enforcement of rules and regulations, prevention of potential hazards, and maintenance of the distribution system plans in "as-built" form.

D. REPORTING REQUIREMENTS

1. The discharger shall file a new report of waste discharge at least 120 days prior to the following:

   (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.

   (b) Significant change in the treatment or disposal method (e.g., change in the method of treatment which would significantly alter the nature of the waste).

   (c) Change in the disposal area from that described in the findings of this Order.

   (d) Increase in flow beyond that specified in this Order.

   (e) Other circumstances which result in a material change in character, amount, or location of the waste discharge.

   (f) Any planned change in the regulated facility or activity which may result in noncompliance with this Order.

2. The discharger shall furnish to the Executive Officer of this Regional Board, within a reasonable time, any information which the Executive Officer may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The discharger shall also furnish to the Executive Officer, upon request, copies of records required to be kept by this Order.

3. The discharger must notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on.

4. The discharger shall comply with the attached Monitoring and Reporting Program No. 90-16. Monitoring results shall be reported at the intervals specified in Monitoring and Reporting Program No. 90-16.

5. If a need for a discharge bypass is known in advance, the discharger shall submit prior notice and, if at all possible, such notice shall be submitted at least 10 days prior to the date of the bypass.

6. Where the discharger becomes aware that it failed to submit any relevant facts in a report of waste discharge or submitted incorrect information in a report of waste discharge or in any report to the Regional Board, it shall promptly submit such facts or information.

7. The discharger shall report any noncompliance which may endanger health or the environment. Any such information shall be provided orally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and, if the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the Executive Officer within 24 hours:

   (a) Any bypass from any portion of the treatment facility.

   (b) Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.

   (c) Any treatment plant upset which causes the effluent limitations of this Order to be exceeded.

8. The discharger shall prepare an engineering report as required by Section 60323 of **Wastewater Reclamation Criteria**. This report shall be prepared in conformance with **Guidelines for the Preparation of an Engineering Report on the Production, Distribution, and Use of Reclaimed Water** prepared by the State Department of Health Services. This report shall be submitted to this Regional Board, the State Department of Health Services, and the County of San Diego Department of Health Services. The use of reclaimed water shall not be initiated until this report is accepted by the Executive Officer.

9. The rules and regulations required by Provision C. 18 shall be submitted to this Regional Board, the State Department of Health Services, and the County of San Diego Department of Health Services. The use of reclaimed water shall not be initiated by other parties until this engineering report is accepted by the Executive Officer.

10. The discharger shall submit a proposed ground water monitoring program. The proposed ground water monitoring program shall be designed and certified by a registered geologist or registered civil engineer. The monitoring program shall be implemented after approval by the Executive Officer. The proposed monitoring program shall be prepared using the following guidelines:

    (a) The ground water monitoring program shall consist of a sufficient number of wells, up to 0.5 miles from the reclaimed water use areas, installed at appropriate locations and depths to yield ground water samples that represent:

    - the background water quality, either upgradient of the reclaimed water use areas or as described in (b) below; and

    - the quality of ground water passing downgradient of the reclaimed water use areas.

    (b) Background water quality of the ground water may be based on sampling of wells that are not upgradient from the reclaimed water use areas where:

    - hydrogeologic conditions do not allow the determination of the upgradient direction; or
    - sampling at other well(s) will provide a representative indication of background water quality.

    (c) The upgradient well(s) must be screened at the same stratigraphic horizon(s) as the downgradient well(s) to ensure comparability of data. The downgradient well(s) must be located, screened, and sufficiently numerous to provide a high level of certainty that releases of waste constituents to the upper part of the uppermost aquifer will be immediately detected.

    (d) The design of the ground water monitoring program must include:

    - establishment of ground water flow paths and rates;

    - interpretation of subsurface geology;

    - determination of depth to ground water;

    - determination of hydraulic conductivity;

    - identification of the uppermost aquifer;

    - identification of the water bearing materials;

    - determination of appropriate screening depths; and

- determination of the number of wells.

(e) A scale map of adequate scale showing the San Pasqual Reclamation Facility and the reclaimed water use areas and the proposed locations of monitoring wells must be submitted with the ground water monitoring proposal.

(f) All monitoring wells must be constructed in a manner that maintains the integrity of the drill hole and prevents cross-contamination of saturated zones. The casing must be appropriately screened or perforated, the annular space (i.e., the space between the well casing and the drillhole wall) shall be packed with filter material (i.e.,sand or gravel), the annular space between the drill hole and well casing above the screened depth must be adequately developed to prevent surface pollution and cross-contamination of saturated zones, and the well must be adequately developed to prevent the movement of sediment into the casing.

(g) All monitoring wells must be logged during drilling under the direct supervision of a registered geologist. Logs of monitoring wells shall be filed with the Department of Water Resources (DWR), on forms provided by DWR, as well as submitted with the ground water monitoring proposal.

(h) The use of an existing well as a monitoring well will be considered provided the well meets the above monitoring well requirements. A proposal to use an existing well to serve as one of the monitoring wells must be certified by a registered geologist or registered civil engineer and must also be accompanied by sufficient information on the construction of the well (i.e., depth & type of casing, screen intervals, dates of installation, use of well, production rate of well) and depth of the ground water table, present and historical, to demonstrate the adequacy of the well in monitoring the quality of ground water in the vicinity of the San Pasqual Reclamation Facility and reclaimed water use areas. The use of existing wells for monitoring purposes is normally not acceptable because the construction and location of existing wells are normally not compatible with monitoring well requirements. However, existing wells will be considered if accompanied by the proper documentation as described above.

11. The discharger shall submit a proposed leak detection monitoring program for the aquaculture ponds. The proposed leak detection monitoring program shall be designed to provide a high level of certainty that releases of sewage from the aquaculture ponds to the upper part of the uppermost aquifer will be immediately detected. The proposed leak detection monitoring program shall be designed and certified by a registered geologist or registered civil engineer. The leak detection program shall be implemented after approval by the Executive Officer. Wastewater shall not be placed in the aquaculture ponds until the leak detection program is approved by the Executive Officer and implemented. If the proposed leak detection monitoring program includes monitoring well(s), then the monitoring well(s) shall be designed in accordance with Reporting Requirement 10. By January 30 of each year, the discharger shall submit a statement certifying that the leak detection program was implemented throughout the previous year.

12. The discharger shall notify the Executive Officer by letter of the following:

    (a) Start of construction of waste treatment and reclaimed water use facilities;

    (b) Estimated date construction will be completed;

    (c) Completion of construction of waste treatment and reclaimed water use facilities; and

    (d) Estimated date the completed facilities will commence operation.

13. All treatment facilities shall be completely constructed and operable prior to initiation of the discharge from the facilities. A report certifying the adequacy of each component of the treatment and disposal facilities shall be submitted by the discharger prior to commencement of the discharge. This certification report shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process and physical design of the facilities will ensure compliance with this Order. The design engineer shall affix his/her signature and engineering license number to this certification report. This report should be submitted prior to construction of the facilities. The discharge shall not be initiated until:

    (a) The certification report is accepted by the Executive Officer;

    (b) The Executive Officer has been notified of the completion of facilities by the discharger;

    (c) An inspection of the facilities has been made by Regional Board staff;

    (d) The ground water monitoring program has been approved by the Executive Officer and conducted for at least six months; and

    (e) The Executive Officer has notified the discharger by letter that the discharge can be initiated.

14. By January 30 of each year, the discharger shall submit a statement certifying that the operation and maintenance plan was implemented throughout the previous year.

15. All applications, reports, or information submitted to the Executive Officer shall be signed and certified as follows:

    (a) The report of waste discharge shall be signed as follows:

        (1) For a corporation - by a principal executive officer of at least the level of vice-president.

        (2) For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.

        (3) For a municipality, state, federal or other public agency - by either a principal executive officer or ranking elected official.

(b) All other reports required by this Order and other information required by the Executive Officer shall be signed by a person designated in paragraph (a) of this provision, or by a duly authorized representative of that person. An individual in a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (a) of this provision;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and

(3) The written authorization is submitted to the Executive Officer.

(c) Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

17. The discharger shall submit reports required under this Order, or other information required by the Executive Officer, to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Boulevard, Suite B
San Diego, California 92124-1331

E. NOTIFICATIONS

1. California Water Code Section 13263(g) states:

"No discharge of waste into waters of the state, whether or not such discharge is made pursuant to waste discharge requirements, shall create a vested right to continue such discharge. All discharges of waste into waters of the state are privileges, not rights."

2. These requirements have not been officially reviewed by the United States Environmental Protection Agency and are not issued pursuant to Section 402 of the Clean Water Act.

3. The California Water Code provides that any person who intentionally or negligently violates any waste discharge requirements issued, reissued, or amended by this Regional Board is subject to a civil monetary remedy of up to 20 dollars per gallon of waste discharged or, if a cleanup and abatement order is issued, up to 15,000 dollars per day of violation or some combination thereof.

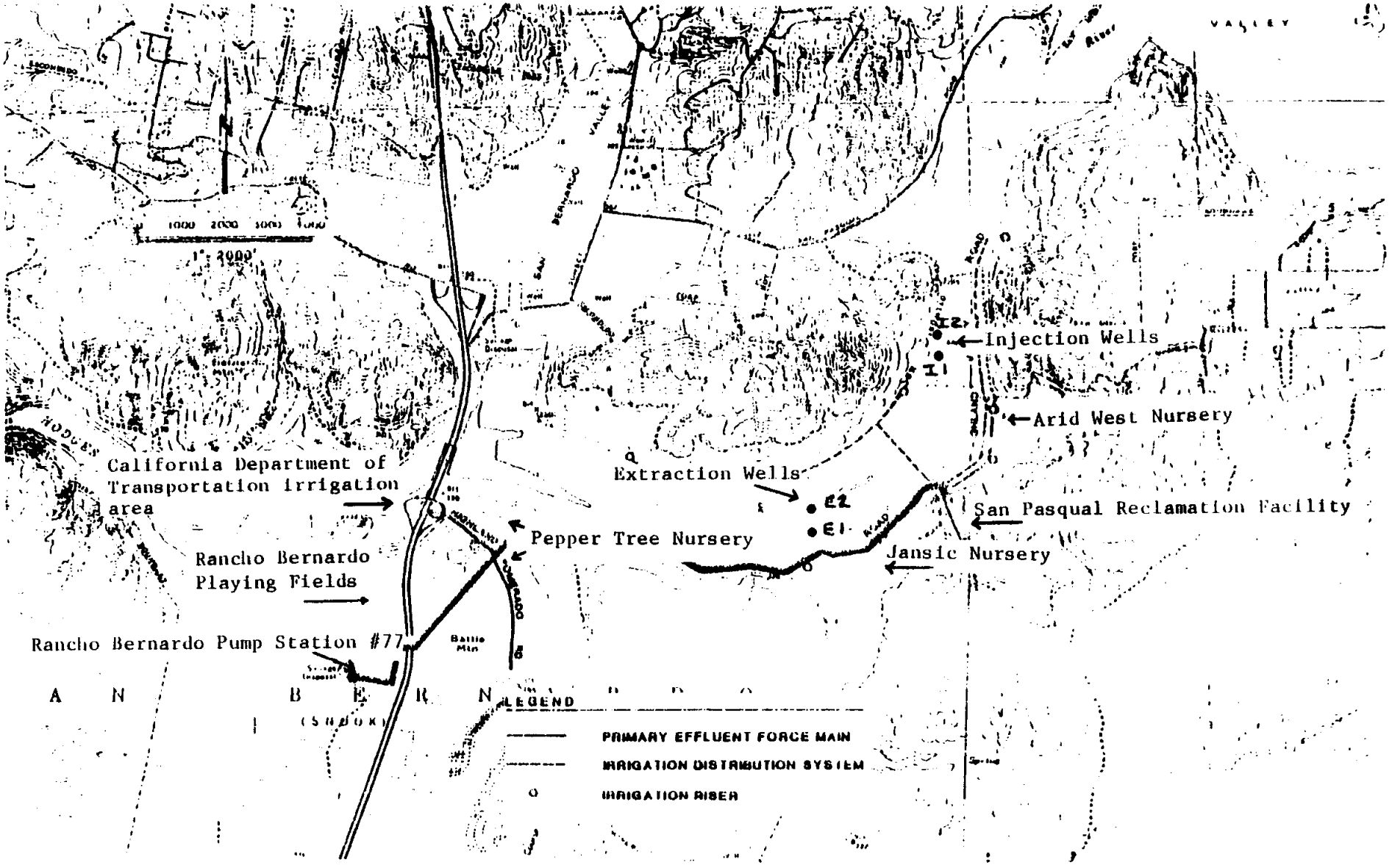
4. The California Water Code provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this Order, or falsifying any information provided in the monitoring reports is guilty of a misdemeanor.

5. **This Order becomes effective on the date of adoption by the Regional Board.**

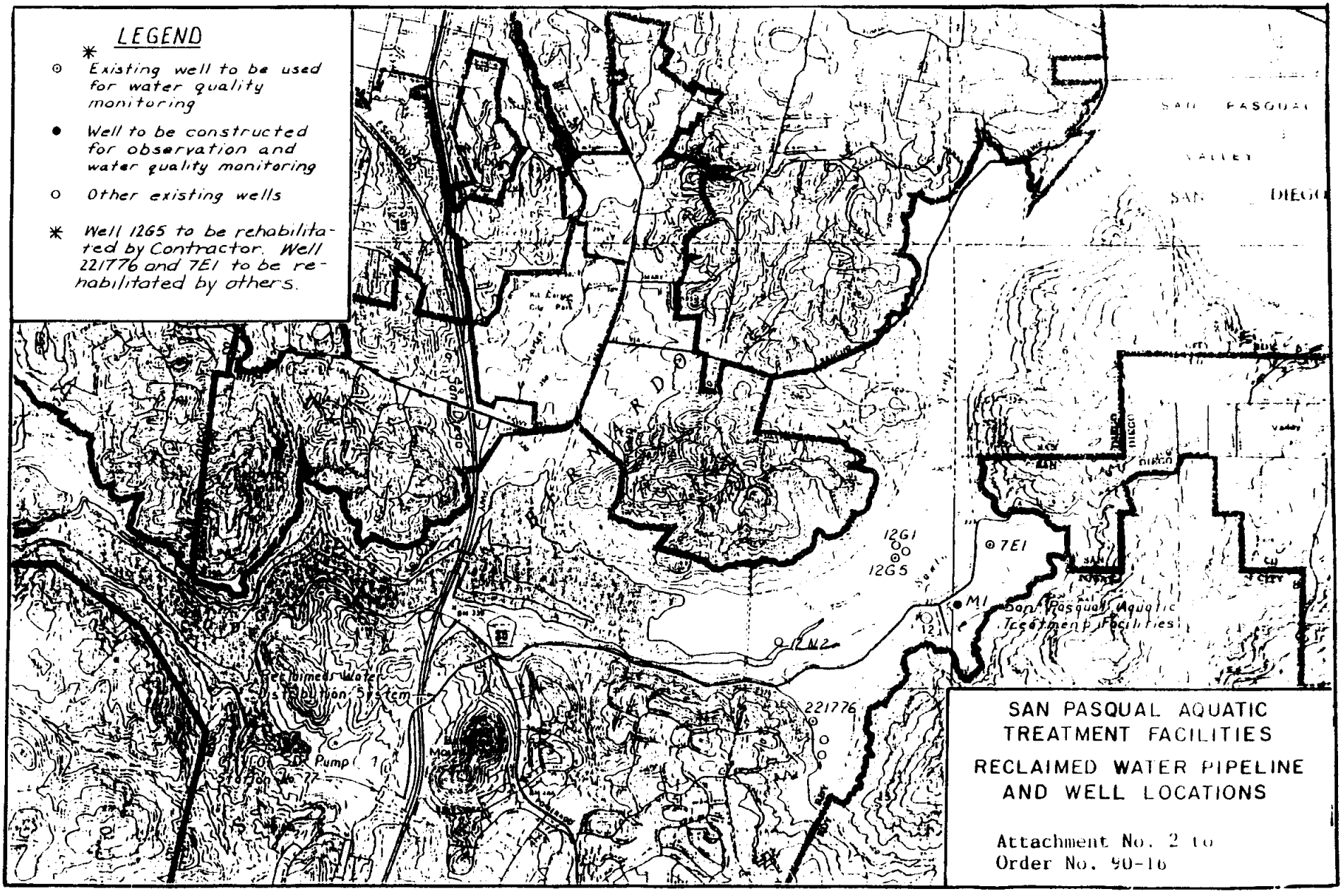
I, Ladin H. Delanev, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on January 29, 1990.

Ladin H. Delaney

LADIN H. DELANEY
Executive Officer




Attachment No. 1 to
Order No. 90-16




SAN PASQUAL AQUATIC TREATMENT FACILITIES

RECLAIMED WATER PIPELINE AND WELL LOCATIONS

Attachment No. 2 to
Order No. 90-16

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

MONITORING AND REPORTING PROGRAM NO. 90-16
FOR THE
CITY OF SAN DIEGO
SAN PASQUAL RECLAMATION FACILITY
SAN DIEGO COUNTY

## A. MONITORING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this Order and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Executive Officer.

2. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than $\pm 5$ percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the following references:

   (a) "A Guide to Methods and Standards for the Measurement of Water Flow," U. S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 97 pp. (Available from the U. S. Government Printing Office, Washington, D. C. 20402. Order by SD Catalog No. C13.10:421.)

   (b) "Water Measurement Manual," U. S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U. S. Government Printing Office, Washington D. C. 20402. Order by Catalog No. 127,19/2:W29/2, Stock No. S/N 24003-0027.)

   (c) "Flow Measurement in Open Channels and Closed Conduits," U. S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Service (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273-535/5ST.)

   (d) "NPDES Compliance Sampling Manual," U. S. Environmental Protection Agency, Office of Water Enforcement. Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, Denver, CO 80225.)

3. Monitoring must be conducted according to United States Environmental Protection Agency test procedures approved under Title 40, Code of Federal Regulations (CFR), Part 136, "Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act" as amended, unless other test procedures have been specified in this Order.

4. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.

5. Monitoring results must be reported on discharge monitoring report forms approved by the Executive Officer.

6. If the discharger monitors any pollutants more frequently than required by this Order, using test procedures approved under 40 CFR, Part 136, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report. The increased frequency of monitoring shall also be reported.

7. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

8. Records of monitoring information shall include:

   (a) The date, exact place, and time of sampling or measurements;
   (b) The individual(s) who performed the sampling or measurements;
   (c) The date(s) analyses were performed;
   (d) The individual(s) who performed the analyses;
   (e) The analytical techniques or method used; and
   (f) The results of such analyses.

9. All monitoring instruments and devices which are used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

10. The discharger shall report all instances of noncompliance not reported under Reporting Requirement D.7 of this Order at the time monitoring reports are submitted. The reports shall contain the information listed in Reporting Requirement D.7.

11. The monitoring reports shall be signed by an authorized person as required by Reporting Requirement D.15.

12. A composite sample is defined as a combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

13. A grab sample is an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

B. EFFLUENT MONITORING

The following shall constitute the effluent monitoring program for the San Pasqual Reclamation Facility:

| Constituent | Unit | Sample Type | Sampling Frequency | Reporting Frequency |
|---|---|---|---|---|
| Flowrate | MGD | Continuous | Daily | Monthly |
| Biochemical Oxygen Demand ($BOD_5$ @ 20°C) | mg/L | Composite | Monthly | Monthly |
| Total Suspended Solids | mg/L | Composite | Monthly | Monthly |
| pH | pH Units | Composite | Monthly | Monthly |
| Total Dissolved Solids | mg/L | Composite | Monthly | Monthly |
| Chloride | mg/L | Composite | Monthly | Monthly |
| Percent Sodium | % | Composite | Monthly | Monthly |
| Sulfate | mg/L | Composite | Monthly | Monthly |
| Nitrate (as $NO_3$) | mg/L | Grab | Monthly | Monthly |
| Iron | mg/L | Composite | Monthly | Monthly |
| Manganese | mg/L | Composite | Monthly | Monthly |
| Methylene Blue Active Substances | mg/L | Composite | Monthly | Monthly |
| Boron | mg/L | Composite | Monthly | Monthly |
| Fluoride | mg/L | Composite | Monthly | Monthly |
| Arsenic | mg/L | Composite | Monthly | Monthly |
| Cadmium | mg/L | Composite | Monthly | Monthly |
| Chromium (total) | mg/L | Composite | Monthly | Monthly |
| Copper | mg/L | Composite | Monthly | Monthly |
| Cyanide | mg/L | Grab | Monthly | Monthly |
| Lead | mg/L | Composite | Monthly | Monthly |
| Nickel | mg/L | Composite | Monthly | Monthly |
| Zinc | mg/L | Composite | Monthly | Monthly |
| Total Petroleum Hydrocarbons | mg/L | Composite | Monthly | Monthly |
| Coliform | MPN/100mL | Grab | * | Monthly |
| Settleable Solids | ml/L | Grab | * | Monthly |
| Turbidity | NTU | Continuous | * | Monthly |

* Monitoring shall at least be conducted as specified in the California Code of Regulations, Title 22, Division 4, Chapter 3, Wastewater Reclamation Criteria, in its present form or as it may be amended.

Note: MGD = million gallons per day
mg/L = milligrams per liter
MPN/100 mL = most probable number per 100 milliliters
ml/L = milliliters per liter
NTU = nephelometric turbidity units

C. ALTERNATE WATER SUPPLY MONITORING

The following shall constitute the alternate water supply (MWD water) monitoring program for the San Pasqual Reclamation Facility:

| Constituent | Unit | Sample Type | Sampling Frequency | Reporting Frequency |
|---|---|---|---|---|
| Total Dissolved Solids | mg/L | Grab | Monthly | Monthly |
| Sulfate | mg/L | Grab | Monthly | Monthly |

D. GROUND WATER MONITORING

The following constituents shall be monitored as part of the ground water monitoring program for the San Pasqual Reclamation Facility:

| Constituent | Unit | Sample Type | Sampling Frequency | Reporting Frequency |
|---|---|---|---|---|
| Total Dissolved Solids | mg/L | Grab | Monthly | Monthly |
| Chloride | mg/L | Grab | Monthly | Monthly |
| Percent Sodium | % | Grab | Monthly | Monthly |
| Sulfate | mg/L | Grab | Monthly | Monthly |
| Nitrate (as $NO_3$) | mg/L | Grab | Monthly | Monthly |
| Iron | mg/L | Grab | Monthly | Monthly |
| Manganese | mg/L | Grab | Monthly | Monthly |
| Methylene Blue Active Substances | mg/L | Grab | Monthly | Monthly |
| Boron | mg/L | Grab | Monthly | Monthly |
| Fluoride | mg/L | Grab | Monthly | Monthly |
| Arsenic | mg/L | Grab | Monthly | Monthly |
| Cadmium | mg/L | Grab | Monthly | Monthly |
| Chromium (total) | mg/L | Grab | Monthly | Monthly |
| Lead | mg/L | Grab | Monthly | Monthly |
| Calcium | mg/L | Grab | Monthly | Monthly |
| Magnesium | mg/L | Grab | Monthly | Monthly |
| pH | pH Units | Grab | Monthly | Monthly |
| Specific Conductivity | $\mu$mho/cm | Grab | Monthly | Monthly |
| Cyanide | mg/L | Grab | Monthly | Monthly |
| Copper | mg/L | Grab | Monthly | Monthly |
| Nickel | mg/L | Grab | Monthly | Monthly |
| Zinc | mg/L | Grab | Monthly | Monthly |

Note: $\mu$mho/cm = micromho per centimeter

E. RECLAIMED WATER USE LOG

A daily log of the quantity of effluent delivered to each disposal and use area shall be submitted monthly.

F. SEWAGE SOLIDS

A log of the type, quantity, and manner of disposal of solids, including water hyacinths, removed in the course of sewage treatment shall be maintained and submitted monthly.

G. LEAK DETECTION PROGRAM IMPLEMENTATION

The certification statement required by Reporting Requirement D.11 shall be submitted annually.

H. OPERATION AND MAINTENANCE PLAN IMPLEMENTATION

The certification statement required by Reporting Requirement D.14 shall be submitted annually.

I. REPORT SCHEDULE

Monitoring reports shall be submitted to the Executive Officer in accordance with the following schedule:

| Reporting Frequency | Report Period | Report Due |
|---|---|---|
| Monthly | January**, February, March, April, May, June, July, August, September, October, November, December | By the 30th day of the following month |
| Annually | January-December | January 30 |

**The January monthly report shall be submitted to the Executive Officer by February 28.

Ordered by: Ladin H. Delaney

LADIN H. DELANEY
Executive Officer
January 29, 1990